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ALCOHOLIC PSYCHOSES BEFORE AND AFTER PROHIBITION

—BY—

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ALCOHOLIC PSYCHOSES BEFORE AND AFTER PROHIBITION

BY HORATIO M. POLLOCK, PH. D.,

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The only nation-wide information concerning alcoholic psychoses among admissions to institutions for mental disease available prior to 1919 is that contained in the Federal Census report on the insane in hospitals in 1910. On the schedules that were filled out for admissions during that year, the question was asked whether the patient was suffering from alcoholic psychosis. The term "alcoholic psychosis" was defined in the instructions for filling out the schedules as follows: "By 'alcoholic psychosis' is meant one of the mental diseases which, by their characteristic symptoms, are known to be the direct result of alcoholic intemperance. Cases of mental disease in which alcoholic intemperance is only one of the etiological factors and cases merely associated with alcoholic intemperance should not be reported under alcoholic psychosis."

Of the 60,769 patients with mental disease admitted to institutions in 1910, 6,122, or 10.1 per cent, were reported to be cases of alcoholic psychosis. The annual rate of admission of alcoholic cases was 6.7 per 100,000 of the general population. Considerable variation in rates was found in the several census divisions.

Table 1. Alcoholic Cases Among Admissions to Institutions for Mental Disease in the Several Census Divisions, 1910

Division of United States	Per Cent of Total Admitted	Rate per 100,000 of Population
New England	12.9	13.7
Middle Atlantic	11.0	8.4
East North Central	10.0	7.2
West North Central	7.8	5.0
South Atlantic	8.0	4.4
East South Central	7.3	3.2
West South Central	8.1	2.7
Mountain	13.9	8.5
Pacific	12.7	10.5
Total	10.1	6.7

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It was found by this census that patients with alcoholic psychoses constituted 12.4 per cent of admissions from urban districts and 6.4 per cent from rural districts. The rate per 100,000 of population in urban communities was 10.7 and in rural, 2.6.

Of the 34,116 males admitted in 1910 to hospitals for mental disease, 5,220, or 15.3 per cent, had alcoholic psychoses. Of the 26,653 females admitted, 902, or 3.4 per cent, were diagnosed as alcoholic. The rates per 100,000 population of same sex were 11.0 and 2.0 respectively.

The figures above cited for the Middle Atlantic Division correspond closely with those compiled by the statistical bureau of the New York State Hospital Commission for the year 1910.

In gathering data concerning admissions, the latter bureau separates first admissions from readmissions, as it is believed that the rate of first admissions constitutes a better measure of the incidence of mental disease. The yearly record of first admissions with alcoholic psychoses to the thirteen civil State hospitals of New York State since 1909 is as follows:

Table 2. First Admissions with Alcoholic Psychoses, Civil State Hospitals of New York, 1909-1921

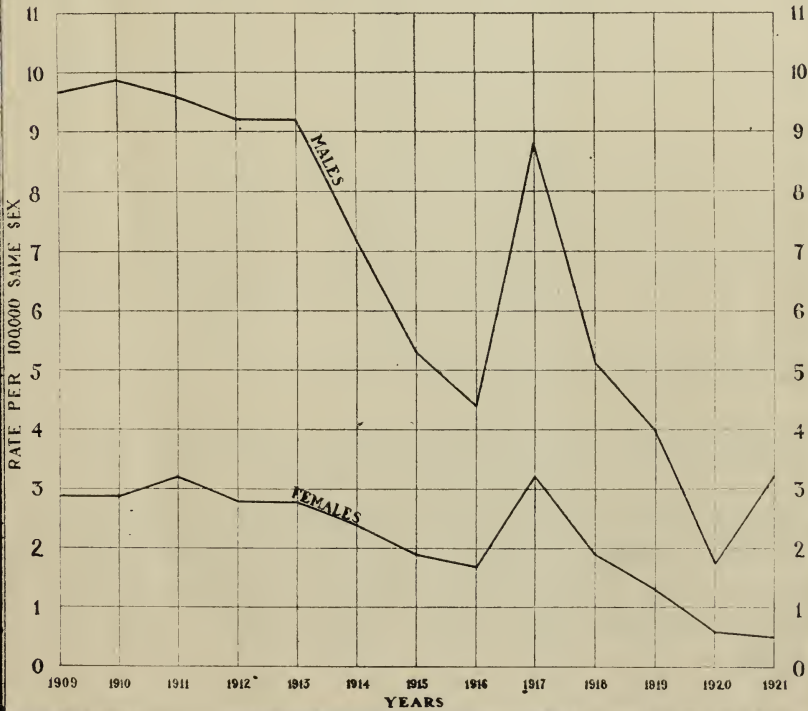
Year	NUMBER			PER CENT OF ALL FIRST ADMISSIONS		
	Males	Females	Total	Males	Females	Total
1909	433	128	561	15.6	5.8	10.8
1910	452	131	583	15.3	5.0	10.5
1911	444	147	591	14.7	5.5	10.4
1912	434	131	565	14.4	4.8	9.8
1913	438	134	572	13.7	4.7	9.4
1914	348	116	464	10.4	3.6	7.4
1915	255	90	345	7.8	3.1	5.6
1916*	215	82	297	8.4	3.5	6.1
1917	437	157	594	12.1	4.8	8.6
1918	257	97	354	7.3	3.0	5.2
1919	204	65	269	5.8	2.0	4.0
1920	90	32	122	2.7	1.0	1.9
1921	167	26	193	4.6	0.8	2.3

* Nine months.

It will be noted from Table 2 that a marked decline in the number of alcoholic first admissions began in 1914 and became more pronounced in 1915. In 1916 a slight change

RATES BY SEX OF FIRST ADMISSIONS WITH ALCOHOLIC PSYCHOSES NEWYORK CIVIL STATE HOSPITALS.

1909 - 1921



in trend occurred, and in 1917 a decided reaction took place, the number of alcoholic cases in that year exceeding that of 1913. In 1918, 1919, and 1920, the number of these cases fell off rapidly and reached its lowest point in 1920.

In 1921 the male alcoholic cases increased, although there was a further reduction in female cases. Chart I shows graphically the rates for both sexes since 1909, based upon the general population. These rates are found in the following table:

Table 3. Rates of Alcoholic First Admissions to the New York Civil State Hospitals per 100,000 of the General Population of the State, 1909-1921

Year	RATE PER 100,000 OF GENERAL POPULATION OF SAME SEX		
	Males	Females	Total
1909	9.7	2.9	6.3
1910	9.9	2.9	6.4
1911	9.6	3.2	6.4
1912	9.2	2.8	6.0
1913	9.2	2.8	6.0
1914	7.2	2.4	4.8
1915	5.3	1.9	3.6
1916*	4.4	1.7	4.0
1917	8.8	3.2	6.0
1918	5.1	1.9	3.5
1919	4.0	1.3	2.6
1920	1.7	0.6	1.2
1921	3.2	0.5	1.8

* Nine months.

CORRELATION OF ALCOHOLIC ADMISSIONS AND PER CAPITA CONSUMPTION OF LIQUORS

That the rate of first admissions with alcoholic psychoses is closely correlated with the per capita consumption of liquors is seen from a comparison of the following index numbers computed from official reports for the years 1909 to 1920:

Table 4. Index Numbers of Rates of Alcoholic Psychoses and Per Capita Consumption of Liquors, 1909 to 1920

Year	Index numbers of rates of alcoholic first admissions to New York State hospitals	Index numbers of per capita consumption of liquors in United States
1909	100	100
1910	102	104
1911	102	108
1912	95	105
1913	95	108
1914	76	108
1915	57	95
1916	63	93
1917	95	95
1918	56	77
1919	41	44
1920	19	14

The coefficient of correlation between the two series of numbers is $0.875 \pm .045$. It is probable than an even closer correlation would have been found had data relative to the per capita consumption of liquors in the State of New York been available. (See Chart II.)

DECLINE OF ALCOHOLIC PSYCHOSES IN MASSACHUSETTS

The figures given above showing the decline in alcoholic psychoses in recent years in New York State are paralleled by data compiled from the official records of the state of Massachusetts by Cora Frances Stoddard,¹ from whose study the following table is taken:

¹ *Wet and Dry Years in a Decade of Massachusetts Public Records*, by Cora Frances Stoddard. *The Scientific Temperance Journal*, June, 1922, Vol. 31, pp. 1-54.

INDEX NUMBERS OF FIRST ADMISSIONS WITH ALCOHOLIC PSYCHOSES IN NEW YORK STATE AND PER CAPITA CONSUMPTION OF LIQUORS IN UNITED STATES.

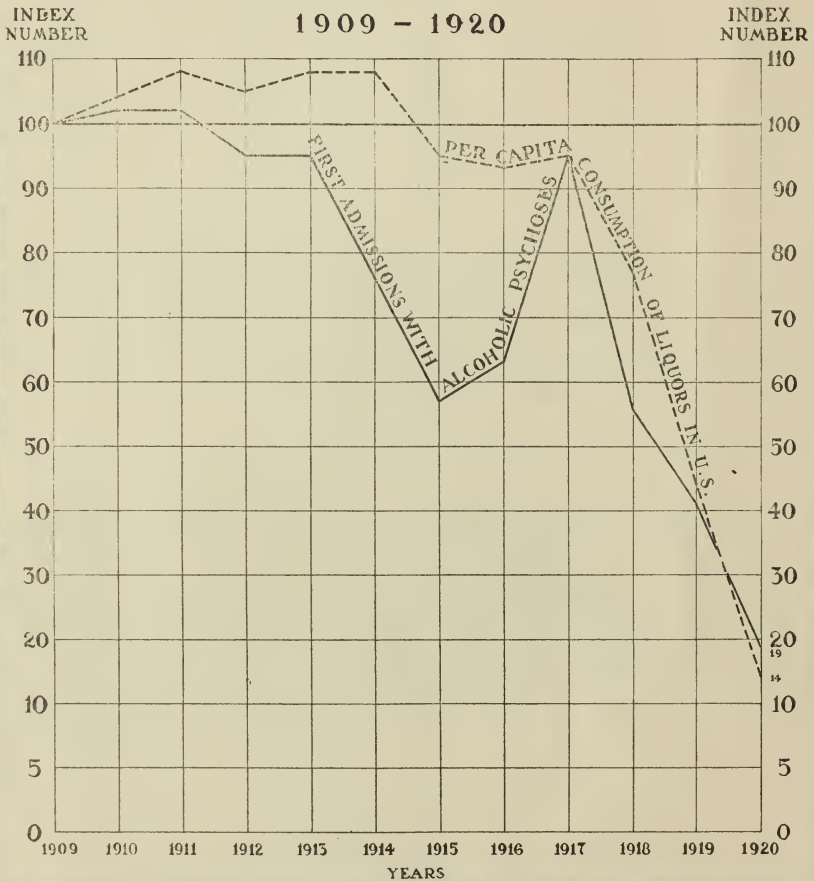


Table 5. First Admissions with Alcoholic Psychoses to Massachusetts State Hospitals for Mental Disease and McLean Hospital, 1912-1921

Year	ALCOHOLIC FIRST ADMISSIONS	
	Number	Per cent of total first admissions
1912	301	11.3
1913	367	11.8
1914	311	10.4
1915	299	9.5
1916	289	9.1
1917	511	12.3
1918	304	8.1
1919	296	7.8
1920	102	3.6
1921	151	4.9

The number of cases among all first admissions in which there is a record of intemperate use of alcohol shows a corresponding decline during the same period in both New York and Massachusetts. The data for New York State are given in Table 6:

Table 6. Intemperate Use of Alcohol Among First Admissions, New York Civil State Hospitals, 1909-1921

Year	INTEMPERATE USERS OF ALCOHOL					
	Males	Number Females	Total	Males	Per cent of total first admissions Females	Total
1909	1,229	369	1,598	44.2	15.1	28.7
1910	1,684*	488*	2,172*	56.9	28.7	38.1
1911	1,082	302	1,384	35.9	11.2	24.3
1912	1,097	273	1,370	36.5	10.0	23.8
1913	1,103	318	1,421	34.6	11.1	23.5
1914	1,027	258	1,285	30.8	8.8	20.5
1915	939	225	1,164	28.8	7.5	18.7
1916†	725	182	907	28.2	7.8	18.5
1917	1,152	300	1,452	32.0	9.2	21.1
1918	851	253	1,104	24.1	7.7	16.2
1919	804	161	965	22.8	4.9	14.2
1920	684	119	803	20.3	3.7	12.2
1921	691	131	822	18.9	4.0	11.8

* Includes moderate drinkers.

† Nine months.

The gradual decline in the excessive use of alcohol indicated by the above table constitutes good evidence that a marked change in the habits of the general population with respect to the use of alcohol had been taking place for several years prior to the enactment of the Volstead Law. The change began before the World War, but was halted by the reaction of 1917. Later it was accelerated by war-time restrictions.

ALCOHOLIC ADMISSIONS IN 1921

The following tables, compiled by Miss Edith M. Furbush, Statistician of The National Committee for Mental Hygiene, from original standardized reports of state hospitals, give the latest available data concerning the prevalence of alcoholic psychoses in various parts of the country:

Table 7. Alcoholic Psychoses Among First Admissions to State Hospitals in Fourteen States, 1921

State	ALCOHOLIC FIRST ADMISSIONS		
	Total first admissions	Number	Per cent of all first admissions
California	2,459	110	4.5
Colorado	457	4	0.9
Maine	399	17	4.3
Massachusetts	2,538	130	5.1
New Hampshire	260	12	4.6
New Jersey	1,301	28	2.2
New York	7,104	210	3.0
Ohio	2,838	61	2.1
Pennsylvania	1,508	39	2.6
Rhode Island	329	19	5.8
South Carolina	740	9	1.2
South Dakota	193	1	0.5
Vermont	140	3	2.1
Virginia	1,315	24	1.8
Total	21,581	667	3.1

These representative data show that only 3.1 per cent of first admissions to state hospitals in 1921 were cases of alcoholic psychoses. Compared with figures previously given from the Federal Census of 1910 and the reports of

the New York State Hospital Commission, a marked general decline in alcoholic insanity is shown. This is further evidenced by the data of all admissions shown in Table 8, which is on nearly the same basis as the Federal Census figures:

Table 8. Alcoholic Admissions to State Hospitals in Fourteen States Compared with All Admissions and General Population, 1921

State	Total admissions	ALL ALCOHOLIC ADMISSIONS		Rate per 100,000 of general population
		Number	Per cent of all admissions	
California	3,098	133	4.3	3.8
Colorado	480	5	1.0	0.5
Maine	490	20	4.1	2.6
Massachusetts	3,349	174	5.2	4.5
New Hampshire	301	14	4.7	3.2
New Jersey	1,557	38	2.4	1.2
New York	9,235	255	2.8	2.4
Ohio	3,539	77	2.2	1.3
Pennsylvania	1,728	47	2.7	0.5
Rhode Island	413	24	5.8	3.9
South Carolina	938	10	1.1	0.6
South Dakota	256	1	0.4	0.2
Vermont	197	3	1.5	0.9
Virginia	1,597	30	1.9	1.3
Total	27,178	831	3.1	1.9

It will be noted that the rate of admissions with alcoholic psychoses in these states was only 1.9 per 100,000 population, as compared to 6.7 for the whole country in 1910. During the year 1920, the first year under prohibition, alcoholic admissions to state hospitals were less than in 1921.

Table 9. Prevalence of Alcoholic Psychoses in Twenty States, 1919-1921

State	Number of Alcoholic First Admissions			Rate of Alcoholic First Admissions per 100,000 of Population		
	1921	1920	1919	1921	1920	1919
Arizona	*	3	..	*	0.9	..
Arkansas	*	8	5	*	0.5	0.3
California	110	*	*	3.1	*	*
Colorado	4	1	2	0.4	0.1	0.2
Connecticut	*	*	31	*	*	2.3
Georgia	*	9	9	*	0.3	0.3
Iowa	*	20	26	*	0.8	1.1
Maine	17	6	18	2.2	0.8	2.4
Massachusetts ..	130	91	295	3.3	2.4	7.8
Nebraska	*	*	6	*	*	0.5
New Hampshire..	12	12	16	2.7	2.7	3.6
New Jersey	28	27	*	0.9	0.9	*
New York	210	143	285	2.0	1.4	2.8
Ohio	61	64	..	1.0	1.1	*
Pennsylvania ...	39	*	*	0.4	*	*
Rhode Island ...	19	14	19	3.1	2.3	3.2
South Carolina...	9	5	6	0.5	0.3	0.4
South Dakota....	1	2	..	0.2	0.3	..
Vermont	3	2	2	0.9	0.6	0.6
Virginia	24	21	30	1.0	0.9	1.3

* Data not available.

Table 9 gives comparative data for several states for 1919, 1920, and 1921. Although the table is incomplete, it shows considerable reduction in alcoholic admissions in several states from 1919 to 1920 and an increase from 1920 to 1921. The reaction in 1921 may be due to lax enforcement of liquor laws or perhaps in part to the economic depression.

*Table 10. Sex of First Admissions with Alcoholic Psychoses
in Twenty States, 1919-1921*

State	1921			1920			1919		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Arizona	*	*	*	3	..	3
Arkansas	*	*	*	8	..	8	5	..	5
California	102	8	110	*	*	*	*	*	*
Colorado	3	1	4	..	1	1	2	..	2
Connecticut	*	*	*	*	*	*	27	4	31
Georgia	*	*	*	8	1	9	9	..	9
Iowa	*	*	*	20	..	20	25	1	26
Maine	16	1	17	6	..	6	17	1	18
Massachusetts ..	102	28	130	78	13	91	241	54	295
Nebraska	*	*	*	*	*	*	6	..	6
New Hampshire	9	3	12	12	..	12	15	1	16
New Jersey....	25	3	28	25	2	27	*	*	*
New York	184	26	210	110	33	143	216	69	285
Ohio	57	4	61	60	4	64	*	*	*
Pennsylvania ..	34	5	39	*	*	*	*	*	*
Rhode Island ..	17	2	19	11	3	14	17	2	19
South Carolina..	9	..	9	5	..	5	6	..	6
South Dakota...	1	..	1	2	..	2
Vermont	2	1	3	1	1	2	2	..	2
Virginia	22	2	24	18	3	21	27	3	30

* Data not available.

2 See note, p. 5.

Table 10 shows the sex distribution of the alcoholic first admissions in the several states. Relatively the decline in female alcoholic first admissions in 1920 and 1921 was more than in male cases. These results correspond with those found by Miss Stoddard² in her study of the effects of prohibition among women. She states: "The women have apparently gained more than the men under prohibition, perhaps because they are less exposed to the bootleggers' blandishments and are less likely to seek out the tribe. At all events, the average number of women in all penal institutions of Massachusetts on September 30, 1920 and 1921, the two dry years, was the lowest of the decade, 60 per cent smaller than the wet years' average, while the total prison population on this date had dropped 52 per cent.

"A decrease of practically one-half in the number of

commitments to the State Reformatory for Women in the two prohibition years carries a stage farther the story, not only of the passing of the alcoholic women from penal institutions, but also of other women offenders.”

ENVIRONMENT OF ALCOHOLIC CASES

During the entire period for which we have adequate data, alcoholic psychoses have been much more prevalent in urban than in rural districts. As previously mentioned, in 1910 the rates of all alcoholic admissions in the United States per 100,000 of general population of the same environment were 10.7 and 2.6 respectively. The admissions from urban districts in that year constituted 77.8 per cent of all the alcoholic admissions. Since 1910, the proportion of alcoholic cases from urban districts has increased. In a study³ of first admissions to the New York civil state hospitals from July 1, 1915, to June 30, 1920, it was found that 90.9 per cent of the alcoholic first admissions were from urban districts. The average annual rate per 100,000 of general population was 3.7 in urban districts and 1.6 in rural districts. Representative data compiled by Miss Furbush from state-hospital reports of several states in 1919, 1920, and 1921, show the following percentages:

Table 11. Environment of First Admissions with Alcoholic Psychoses, 1919-1921

(Representative data compiled from state-hospital reports of several states)

Year	URBAN		RURAL	
	Number	Per cent	Number	Per cent
1919	333	85.6	56	14.4
1920	400	83.9	77	16.1
1921	622	84.4	115	15.6

As the number and location of the state hospitals reporting were not identical in the three years, the above data are not strictly comparable, but indicate clearly the preponderance of cases of alcoholic psychoses in urban districts.

³ *Mental Disease in Cities, Villages, and Rural Districts of New York, 1915-1920*, by Horatio M. Pollock and William J. Nolan. *State Hospital Quarterly*, November, 1921, Vol. 7, pp. 38-65.

CONCLUSIONS

1. Marked reduction in the prevalence of alcoholic psychoses throughout the United States has taken place since 1910. This is due partly to restrictions on the liquor traffic and partly to changes in the habits of the people.
2. The lowest rate of first admissions with alcoholic psychoses occurred in 1920; a reaction occurred in 1921.
3. The rate of alcoholic first admissions is closely correlated with the per capita consumption of liquors.
4. The reduction in the rate of alcoholic psychoses has been relatively greater among women than among men.
5. Admissions with alcoholic psychoses come principally from urban districts.



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